

Title: Progress toward the Synthesis of an Antiviral Phenylpropenoid and Derivatives

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Abstract:

Human rhinovirus (HRV) is one of the primary causes of mild upper respiratory infections and is the most common infectious agent which affects billions of humans globally. To most healthy individuals, this illness causes mild symptoms. In populations who have immunosuppression, comorbidities, or predisposition to health issues, this virus can cause severe symptoms which can lead to possible hospitalizations and an increased mortality rate. Given the lack of approved therapeutics for this disease, our project aims to prepare a target phenylpropenoid, an organic molecule isolated from the plant *Bupleurum fruticosum* exhibiting antiviral activity against HRV. Our synthetic approach toward the target compound involves a three-stage process: synthesizing a phenylpropenol fragment, preparing a bis-enoate fragment, and combining the two through esterification to access the target phenylpropenoid. We have successfully prepared the phenylpropenol fragment and are working toward accessing the bis-enoate fragment. Our findings will enable further examination of the target molecule and preparation of derivatives to assess in future structure-activity relationship studies that may provide valuable insights for future target design.